



Commonwealth of Massachusetts
Executive Office of Energy & Environmental Affairs

Department of Environmental Protection

Southeast Regional Office • 20 Riverside Drive, Lakeville MA 02347 • 508-946-2700

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RICHARD K. SULLIVAN JR.
Secretary

KENNETH L. KIMMELL
Commissioner

September 26, 2013

Scott Alfonse, Executive Director
Greater New Bedford Regional
Refuse Management District
300 Samuel Barnet Boulevard
New Bedford, Massachusetts 02745

RE: Dartmouth
Transmittal No.: X254662
Application No.: SE-13-020
Class: OP
FMF No.: 0498
AIR QUALITY PLAN APPROVAL

Dear Mr. Alfonse:

The Massachusetts Department of Environmental Protection (“MassDEP”), Bureau of Waste Prevention, has reviewed your Limited Plan Application (“Application”) listed above. This Application concerns the proposed construction of an Anaerobic Digestion Facility at the Greater New Bedford Regional Refuse Management District, Crapo Hill Landfill located at 300 Samuel Barnet Boulevard in Dartmouth, Massachusetts (“Facility”).

This Application was submitted in accordance with 310 CMR 7.02 Plan Approval and Emission Limitations as contained in 310 CMR 7.00 “Air Pollution Control,” regulations adopted by MassDEP pursuant to the authority granted by Massachusetts General Laws, Chapter 111, Section 142 A-J, Chapter 21C, Section 4 and 6, and Chapter 21E, Section 6. MassDEP’s review of your Application has been limited to air pollution control regulation compliance and does not relieve you of the obligation to comply with any other regulatory requirements.

MassDEP has determined that the Application is administratively and technically complete and that the Application is in conformance with the Air Pollution Control regulations and current air pollution control engineering practice, and hereby grants this **Plan Approval** for said Application, as submitted, subject to the conditions listed below.

Please review the entire Plan Approval, as it stipulates the conditions with which the Facility owner/operator (“Permittee”) must comply in order for the Facility to be operated in compliance with this Plan Approval.

1. DESCRIPTION OF FACILITY AND APPLICATION

Greater New Bedford Regional Refuse Management District has proposed the installation and operation of an anaerobic digestion (“AD”) system for biogas production. The AD system will have a capacity designed to provide approximately 100,000 gallons of digester capacity, which is sufficient to manage an average of 3,000 gallons per day of liquid feedstock consisting of food waste, wastewater treatment plant sludge, and fats, oils and grease (“fog”).

The AD system consists of the following key components:

- The Blending and Mixing Unit is a 4,000 gallon mixing vessel with the capacity to manage up to 200 gallons per minute of feedstock. The unit will be maintained at a slight negative pressure to control odors. The evacuated air will be conveyed by blower to combustion air inlets at the Landfill Gas to Energy (LFGTE) Facility.¹
- The Heat Exchanger is a single pass, counter flow, tube in tube unit that is capable of exchanging up to 1.0 million BTU per hour of energy. The hot side is sized for flow rates up to 150 gallons per minute of antifreeze mixture heated by heat recovered from the landfill gas engines at the adjacent LFGTE Facility.
- The Digester is a 100,000 gallon fixed domed roof insulated steel tank.
- The Biogas Delivery System consists of gas piping at the top of the Digester connected to existing landfill gas piping immediately upstream of the inlet to the LFGTE Facility. A knockout vessel will be used to remove condensate from the biogas.
- In the event that the LFGTE Facility is not operational, the biogas will be directed to the existing open flare at the Permittee’s Facility.

The AD System is expected to generate approximately 0.91 million British Thermal Units per hour or 25 standard cubic feet per minute of biogas at 61% methane.

2. EMISSION UNIT (EU) IDENTIFICATION

Each Emission Unit (EU) identified in Table 1 is subject to and regulated by this Plan Approval:

¹ The Landfill Gas to Energy Facility is owned and operated by Commonwealth New Bedford Energy LLC. and subject to MassDEP Plan Approval 4B04015 (Transmittal No. W050893) dated November 9, 2004.

Table 1			
EU#	Description	Design Capacity	Pollution Control Device (PCD)
1	Anaerobic Digestion System	25 SCFM (nominal)	existing flare

Table 1 Key:

EU# = Emission Unit Number

PCD = Pollution Control Device

SCFM = standard cubic feet per minute

3. **APPLICABLE REQUIREMENTS**

A. **OPERATIONAL, PRODUCTION and EMISSION LIMITS**

The Permittee is subject to, and shall not exceed the Operational, Production, and Emission Limits as contained in Table 2 below:

Table 2			
EU#	Operational / Production Limit	Air Contaminant	Emission Limit
1	1. 3,000 gallons of feedstock per day based on a 90 day rolling average	N/A	As contained in MassDEP Plan Approval 4I98059 dated March 19, 2007

Table 2 Key:

EU# = Emission Unit Number

N/A = not applicable

B. **COMPLIANCE DEMONSTRATION**

The Permittee is subject to, and shall comply with, the monitoring, testing, record keeping, and reporting requirements as contained in Tables 3, 4, and 5 below:

Table 3	
EU#	Monitoring and Testing Requirements
1	1. The Permittee shall continuously monitor the pressure in the Blending and Mixing tank to ensure it is maintained at a negative pressure at all times.
	2. The Permittee shall continuously monitor the biogas production rate of the anaerobic digestion system.
Facility-wide	3. If and when MassDEP requires it, the Permittee shall conduct emission testing in accordance with USEPA Reference Test Methods and regulation 310 CMR 7.13.

Table 3 Key:

EU# = Emission Unit Number

USEPA = United States Environmental Protection Agency

CMR = Code of Massachusetts Regulations

Table 4	
EU#	Record Keeping Requirements
1	1. The Permittee shall continuously record the pressure in the Blending and Mixing tank to document it is maintained at negative pressure at all times.
Facility-wide	2. The Permittee shall maintain adequate records on-site to demonstrate compliance with all operational, production, and emission limits contained in Table 2 above. Records shall also include the actual emissions of air contaminant(s) emitted for each calendar month and for each consecutive twelve month period (current month plus prior eleven months). These records shall be compiled no later than the 15 th day following each month. An electronic version of the MassDEP approved record keeping form, in Microsoft Excel format, can be downloaded at http://www.mass.gov/dep/air/approvals/aqforms.htm#report .
	3. The Permittee shall maintain records of monitoring and testing as required by Table 3.
	4. The Permittee shall maintain a copy of this Plan Approval, underlying Application and the most up-to-date SOMP for the EU(s) approved herein on-site.
	5. The Permittee shall maintain a record of routine maintenance activities performed on the approved EU(s), PCD(s) and monitoring equipment. The records shall include, at a minimum, the type or a description of the maintenance performed and the date and time the work was completed.
	6. The Permittee shall maintain a record of all malfunctions affecting air contaminant emission rates on the approved EU(s) and monitoring equipment. At a minimum, the records shall include: date and time the malfunction occurred; description of the malfunction; corrective actions taken; the date and time corrective actions were initiated and completed; and the date and time emission rates and monitoring equipment returned to compliant operation.

Table 4	
EU#	Record Keeping Requirements
	7. The Permittee shall maintain records required by this Plan Approval on-site for a minimum of five (5) years.
	8. The Permittee shall make records required by this Plan Approval available to MassDEP and USEPA personnel upon request.

Table 4 Key:

EU# = Emission Unit Number

PCD = Pollution Control Device

SOMP = Standard Operating and Maintenance Procedure

USEPA = United States Environmental Protection Agency

Table 5	
EU#	Reporting Requirements
Facility-wide	1. The Permittee shall submit to MassDEP all information required by this Plan Approval over the signature of a "Responsible Official" as defined in 310 CMR 7.00 and shall include the Certification statement as provided in 310 CMR 7.01(2)(c).
	2. The Permittee shall notify the Southeast Regional Office of MassDEP, Gregg Hunt Compliance & Enforcement Chief by telephone 508-946-2817, email, sero.air@state.ma.us or fax 508-947-6557, as soon as possible, but no later than one (1) business day after discovery of an exceedance(s) of Table 2 requirements. A written report shall be submitted to Compliance & Enforcement Chief at MassDEP within three (3) business days thereafter and shall include: identification of exceedance(s), duration of exceedance(s), reason for the exceedance(s), corrective actions taken, and action plan to prevent future exceedance(s).
	3. The Permittee shall provide a copy to MassDEP of any record required to be maintained by this Plan Approval within 30-days from MassDEP's request.
	4. The Permittee shall submit to MassDEP for approval a stack emission pretest protocol, at least 30 days prior to emission testing, for emission testing as defined in Table 3 Monitoring and Testing Requirements.
	5. The Permittee shall submit to MassDEP a final stack emission test results report, within 45 days after emission testing, for emission testing as defined in Table 3 Monitoring and Testing Requirements.

Table 5 Key:

EU# = Emission Unit Number

CMR = Code of Massachusetts Regulations

4. SPECIAL TERMS AND CONDITIONS

The Permittee is subject to, and shall comply with, the following special terms and conditions:

- A. The Permittee shall comply with the Special Terms and Conditions as contained in Table 6 below:

Table 6	
EU#	Special Terms and Conditions
1	1. Sound impacts shall not exceed 10 dB(A) above background and shall not cause a puretone condition as defined in the Division of Air Quality Control Noise Policy No. 90-001.
	2. Operation of the EU is subject to the terms and conditions contained in MassDEP Approvals: <ul style="list-style-type: none"> • BWP SW 11, Landfill – Major Modification, Transmittal No. X254714, dated September 16, 2013 • BWP SW 40, Beneficial Use Determination, Transmittal No. X255090 dated September 16, 2013 • BWP SW 40, Beneficial Use Determination, Transmittal No. X255091, dated September 16, 2013 • BWP SW 32, Scope of Work for a Major Demonstration Project, Transmittal No. X254686, currently under review.
	3. In the event that the engines at the associated LFGTE Facility are not operational, all biogas from the AD system shall be routed to the flare.
Facility-wide	4. Any emergency engine installed at the Facility to support the proposed anaerobic digestion system shall be in accordance with the “Industry Performance Standards” at 310 CMR 7.26(40) through (42).
	5. MassDEP Plan Approval 4I98059, Transmittal no. W003199, dated March 19, 2007 remains in force. The Permittee shall not exceed the emission limits contained therein. The Permittee shall comply with approved conditions specified in Plan Approval 4I98059 except for purposes of defining landfill gas, which shall include biogas.

Table 6 Key:

EU# = Emission Unit Number
LFGTE = Landfill gas to energy
AD = anaerobic digestion
dB(A) = decibels

- B. The Permittee shall install and use an exhaust stack, as required in Table 7, on each of the Emission Units that is consistent with good air pollution control engineering practice and that discharges so as to not cause or contribute to a condition of air pollution. Each exhaust stack shall be configured to discharge the gases vertically and shall not be equipped with any part or device that restricts the vertical exhaust flow of the emitted gases, including but not

limited to rain protection devices known as “shanty caps” and “egg beaters.” The Permittee shall install and utilize exhaust stacks with the following parameters, as contained in Table 7 below, for the Emission Units that are regulated by this Plan Approval:

Table 7				
EU#	Stack Height Above Ground (feet)	Stack Inside Exit Dimensions	Stack Gas Exit Velocity Range (feet per second)	Stack Gas Exit Temperature Range (°F)
1	N/A	N/A	N/A	N/A

Table 7 Key:

EU# = Emission Unit Number

°F = Degree Fahrenheit

N/A = Not applicable

5. GENERAL CONDITIONS

The Permittee is subject to, and shall comply with, the following general conditions:

- A. Pursuant to 310 CMR 7.01, 7.02, 7.09 and 7.10, should any nuisance condition(s), including but not limited to smoke, dust, odor or noise, occur as the result of the operation of the Facility, then the Permittee shall immediately take appropriate steps including shutdown, if necessary, to abate said nuisance condition(s).
- B. If asbestos remediation/removal will occur as a result of the approved construction, reconstruction, or alteration of this Facility, the Permittee shall ensure that all removal/remediation of asbestos shall be done in accordance with 310 CMR 7.15 in its entirety and 310 CMR 4.00.
- C. If construction or demolition of an industrial, commercial or institutional building will occur as a result of the approved construction, reconstruction, or alteration of this Facility, the Permittee shall ensure that said construction or demolition shall be done in accordance with 310 CMR 7.09(2) and 310 CMR 4.00.
- D. Pursuant to 310 CMR 7.01(2)(b) and 7.02(7)(b), the Permittee shall allow MassDEP and / or USEPA personnel access to the Facility, buildings, and all pertinent records for the purpose of making inspections and surveys, collecting samples, obtaining data, and reviewing records.

- E. This Plan Approval does not negate the responsibility of the Permittee to comply with any other applicable Federal, State, or local regulations now or in the future.
- F. Should there be any differences between the Application and this Plan Approval, the Plan Approval shall govern.
- G. Pursuant to 310 CMR 7.02(3)(k), MassDEP may revoke this Plan Approval if the construction work is not commenced within two years from the date of issuance of this Plan Approval, or if the construction work is suspended for one year or more.
- H. This Plan Approval may be suspended, modified, or revoked by MassDEP if MassDEP determines that any condition or part of this Plan Approval is being violated.
- I. This Plan Approval may be modified or amended when in the opinion of MassDEP such is necessary or appropriate to clarify the Plan Approval conditions or after consideration of a written request by the Permittee to amend the Plan Approval conditions.
- J. The Permittee shall conduct emission testing, if requested by MassDEP, in accordance with USEPA Reference Test Methods and regulation 310 CMR 7.13. If required, a pretest protocol report shall be submitted to MassDEP at least 30 days prior to emission testing and the final test results report shall be submitted within 45 days after emission testing.
- K. Pursuant to 310 CMR 7.01(3) and 7.02(3)(f), the Permittee shall comply with all conditions contained in this Plan Approval. Should there be any differences between provisions contained in the General Conditions and provisions contained elsewhere in the Plan Approval, the latter shall govern.

6. MASSACHUSETTS ENVIRONMENTAL POLICY ACT

MassDEP has determined that the filing of an Environmental Notification Form (ENF) with the Secretary of Energy & Environmental Affairs, for air quality control purposes, was not required prior to this action by MassDEP. Notwithstanding this determination, the Massachusetts Environmental Policy Act (MEPA) and 301 CMR 11.00, Section 11.04, provide certain "Fail-Safe Provisions," which allow the Secretary to require the filing of an ENF and/or an Environmental Impact Report (EIR) at a later time.

7. APPEAL PROCESS

This Plan Approval is an action of MassDEP. If you are aggrieved by this action, you may request an adjudicatory hearing. A request for a hearing must be made in writing and postmarked within twenty-one (21) days of the date of issuance of this Plan Approval.

Under 310 CMR 1.01(6)(b), the request must state clearly and concisely the facts, which are the grounds for the request, and the relief sought. Additionally, the request must state why the Plan Approval is not consistent with applicable laws and regulations.

The hearing request along with a valid check payable to the Commonwealth of Massachusetts in the amount of one hundred dollars (\$100.00) must be mailed to:

Commonwealth of Massachusetts
Department of Environmental Protection
P.O. Box 4062
Boston, MA 02211

This request will be dismissed if the filing fee is not paid, unless the appellant is exempt or granted a waiver as described below. The filing fee is not required if the appellant is a city or town (or municipal agency), county, or district of the Commonwealth of Massachusetts, or a municipal housing authority.

MassDEP may waive the adjudicatory hearing-filing fee for a person who shows that paying the fee will create an undue financial hardship. A person seeking a waiver must file, together with the hearing request as provided above, an affidavit setting forth the facts believed to support the claim of undue financial hardship.

Enclosed is a stamped approved copy of the application submittal.

Should you have any questions concerning this Plan Approval, please contact the undersigned by telephone at 508-946-2824, or in writing at the letterhead address.

This final document copy is being provided to you electronically by the
Department of Environmental Protection. A signed copy of this document
is on file at the DEP office listed on the letterhead.

Thomas Cushing
Permit Chief
Bureau of Waste Prevention

Enclosure

cc: Dartmouth Board of Health
MassDEP/SERO
Attn: P. Weinberg
M. Pinaud
M. Dakers
L. Black

MassDEP/Boston
Attn: Yi Tian
Commonwealth Resource Management Corp.
Attn: T. Yeransian